UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

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EXPLANATION OF SIGNIFICANT DIFFERENCES
WELLS G & H SUPERFUND SITE
WOBURN, MASSACHUSETTS

Site Name: Wells G & H Superfund Site

Location: Woburn, Massachusetts

Lead Agency: U.S. Environmental Protection Agency

Support Agency: Massachusetts Department of Environmental Protection

Under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), if the United States Environmental Protection Agency (EPA) determines that the remedial action at a Site differs significantly in scope, performance or cost from the Record of Decision (ROD) for the Site, EPA shall publish an explanation of the significant differences between the remedial action being undertaken and the remedial action set forth in the ROD and the reasons such changes are being made.

This Explanation of Significant Differences (ESD) contains a brief history of the Wells G & H Site, a description of the remedy selected in the ROD signed on September 14, 1989, and a description of and rationale for the changes to the ROD. These changes are included in the proposed settlement embodied in the Consent Decree signed by EPA's Region I office, the Commonwealth of Massachusetts, and certain potentially responsible parties on September 28, 1990.

This ESD and other supporting documents can be found in the Administrative Record located at EPA's Region I office at 90 Canal Street, Boston, Massachusetts, open Monday - Friday, 8 am - 1 pm and 2 pm - 5 pm, and at the Woburn Public Library, 45 Pleasant Street, Woburn, Massachusetts 01801.

I. Site History

The Wells G & H Superfund Site covers approximately 330 acres in east Woburn, Middlesex County, Massachusetts. The Site includes the aquifer and land mass area located within the zone of contribution of the two municipal drinking water wells known as Wells G & H. The boundaries of the Site are Route 128 to the north, Route 93 to the east, the Boston and Maine railroad to the west, and Salem Street to the south.

The Aberjona River flows through the Site and eventually reaches the Mystic Lakes in Winchester as part of the Mystic River watershed. Wells G & H are situated in the sand and gravel aquifer of the Aberjona River basin. The Site includes substantial wetland areas on both sides of the Aberjona River which are associated with the Aberjona River floodplains.

Wells G & H were developed by the City of Woburn in 1964 and 1967, respectively. The Wells, screened in the Aberjona River Aquifer, provided an estimated twenty-eight percent of the community's drinking water supply. In 1979, the Massachusetts Department of Environmental Protection (formerly Massachusetts Department of Environmental Quality Engineering) tested these water supply wells and detected contamination consisting of several chlorinated volatile organic compounds ranging from one to four hundred parts per billion (ppb). As a result of these findings, the Wells were immediately shut down. In 1982, the Wells G & H Site was listed on the National Priorities List, making it eligible for funding for remedial action under CERCLA.

Between 1981 and 1989, EPA, as well as several owners of property within the Site boundaries, conducted a series of studies to determine the nature and extent of contamination at the Site. The results of the studies revealed groundwater contaminated with volatile organic compounds (VOCs) throughout a one square mile area surrounding the Wells. This one square mile area now approximates the Site boundaries.

Five properties surrounding the Wells were identified as the sources of the groundwater contamination. These properties belong to W.R. Grace & Co. - Conn., UniFirst Corporation, Wildwood Conservation Corporation, New England Plastics Company, and the Olympia Nominee Trust. VOCs were found in the groundwater beneath these five source area properties.

In addition to the groundwater contamination, EPA identified soil contamination above target levels on the Wildwood, UniFirst, New England Plastics and Olympia properties. Specifically, EPA found the following: a mixture of VOCs, pesticides, polychlorinated biphenyls (PCBs), PAHs and lead on the Wildwood property; VOCs on the UniFirst property; PAHs on the Olympia property; and VOCs on the New England Plastics property. Sediment samples taken from the Aberjona River and its surrounding wetlands within the Site boundaries revealed contamination consisting of PAHs and metals such as arsenic, mercury, and chromium. Finally, an area of sludge and debris was identified on the Wildwood property.

II. Summary of the Remedy

On September 14, 1989, EPA issued a Record of Decision (ROD) that embodied the remedy selected for the first operable unit of the

Site. The remedial action selected in the ROD consists of the following:

1. Treatment of contaminated soil using in-situ volatilization on the Wildwood property;

2. Excavation and on-site incineration of contaminated soils at the Wildwood, Olympia, New England Plastics and UniFirst properties;

3. Treatment and/or disposal of the sludge and debris found on the Wildwood property in a manner to be determined during the design phase of the clean-up;

4. Extraction and treatment of contaminated groundwater separately at the five source area properties using pre-treatment for metals and an air stripper to remove contaminants, or an equally or more effective technology approved by EPA. The extraction systems will be designed to address the specific bedrock and/or overburden contamination at each source area property.

III. Explanation of Significant Differences

A. Significant Changes

1. On-site Incineration of Soils Changed to Off-site Incineration

Off-site incineration will now be used to treat contaminated soils on the Wildwood, New England Plastics, and Olympia properties instead of on-site incineration. Because these contaminated soils will now be transferred off-site, this portion of the remedial action must be conducted in accordance with Section 121(d)(3) of CERCLA.

Off-site incineration is equally effective and protective of human health and the environment as on-site incineration. Off-site incineration was not selected in the ROD because it was more expensive than on-site incineration. On-site incineration would, however, require significant coordination among the parties performing the clean-up by requiring use of a common incinerator. Those parties conducting the clean-up prefer to act separately and feel that it is more cost effective for them if the soil is taken off-site. The settlement requires that they implement this portion of the remedy regardless of cost.

2. In-situ Volatilization on UniFirst Property

In-situ volatilization instead of incineration will now be used for treatment of the contaminated soil on the UniFirst property. A review of recently gathered data on the UniFirst property shows

that the soil on the UniFirst property is, in part, being recontaminated by the upward migration of VOC vapors from the highly contaminated groundwater beneath the pavement of the UniFirst property. This is supported by recent data collected at the UniFirst property in an area of the property that had been excavated and refilled with clean soil in 1986. The data collected in 1989 show that this area is now contaminated with tetrachloroethene.

Although the contaminated soil could currently be treated by incineration, the vapors from the groundwater would continue to recontaminate the soil and the soil would again need to be excavated and incinerated. Repeated incineration of soils would be more costly than originally estimated by EPA in the ROD. The only alternative would be to wait until groundwater remediation is complete before incinerating the soil.

In-situ volatilization, however, can be applied at an appropriate point during groundwater remediation, and would be more efficient and effective since the apparatus can remain on-site and be turned on and off as necessary. In-situ volatilization is the selected remedy for treating similarly contaminated soil on other portions of the Site and is protective of human health and the environment.

3. Change in Target Clean-up Levels

The target levels for non-carcinogenic action levels in groundwater set out in Table 7 of the ROD entitled "ARAR-Based Action Levels For Groundwater" will be changed to more stringent levels. This change is designed to correct an inadvertent error in transcription which occurred in the final drafting of the ROD. This error was not identified until after the issuance of the ROD.

Table 7 incorrectly identified milligrams/liter (mg/l) as the units for the non-carcinogenic action levels in groundwater. The units have now been changed to micrograms/liter (ug/l), which reflect the units used for these compounds under the Safe Drinking Water Act and were the intended action levels. This is consistent with other portions of the ROD that identify Maximum Contaminant Levels (MCLs) promulgated under the Safe Drinking Water Act as the clean up levels for the Site. This correction does not alter the cost of the remedy for the Site since MCLs were consistently used as the basis for any calculations in the Feasibility Study.

B. Other Non-Significant Change

1. Combined Extraction Systems for the UniFirst and Grace Properties

The UniFirst and Grace properties may share extraction systems for groundwater if it proves to be beneficial and appropriate during pre-design. The ROD required separate extraction systems on each source area property because sufficient technical information was not available to design the appropriate extraction system for each source area property. In addition, if each property had its own separate system it would require less coordination and cooperation between the different property owners thereby making it easier to implement.

Since the ROD was written, UniFirst and Grace have begun pre-design work on these two adjacent properties pursuant to a Consent Order entered into under Sections 104(b) and 122(d)(3) of CERCLA. Under this Order, UniFirst and Grace are performing pilot studies for the extraction and treatment of contaminated groundwater on their respective properties. They propose to use one extraction well on the UniFirst property to extract groundwater from both the Grace and UniFirst properties simultaneously. If this proves to be an efficient and effective method for extracting contaminated groundwater from both properties, then it will be incorporated into the design of the remedial action for these properties.

C. Summary

This ESD provides for certain changes to the soil and groundwater remedy as described above, but the overall remedy fundamentally remains the same: incineration and in-situ volatilization of contaminated soils, removal of sludge and debris, and extraction and treatment of groundwater at the source areas.

IV. Support Agency Comments

The Commonwealth of Massachusetts has participated with EPA in developing the adjustments to the ROD which are described herein and concurs with the approach adopted by EPA. Massachusetts is a signatory to the proposed settlement that includes these changes to the remedy.

V. Affirmation of the Statutory Determinations

Considering the new information that has been developed and the changes that have been made to the selected remedy, EPA believes the remedy remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. In addition, this remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.

VI. Public Participation Activities

This ESD and supporting information are available for public review at the locations and times identified in the Introduction to this document.

VII. Declaration

For the foregoing reasons, by my signature below, EPA is issuing this Explanation of Significant Differences for the Wells G & H Superfund Site in Woburn, Massachusetts.

April 25, 1997
Date

Julie Belaga
Regional Administrator